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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/791,449      | 03/02/2004  | Annette C. Grot      | 10030926-1          | 3455             |

7590 10/03/2005

AGILENT TECHNOLOGIES, INC.  
Legal Department, DL 429  
Intellectual Property Administration  
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EXAMINER

CHANG, AUDREY Y

ART UNIT PAPER NUMBER

2872

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/791,449             | GROT ET AL.         |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Audrey Y. Chang        | 2872                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-8 and 10-22 is/are allowed.
- 6) ☒ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on July 25, 2005, which has been entered into the file.
- By this amendment, the applicant has amended claims 1, 15, and 17-21 and has canceled claim 9.
- Claims 1-8 and 10-22 remain pending in this application.

### *Response to Amendment*

1. The amendment filed July 25, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: claims 1 and 15 have been amended to include the phrase "an object at an unknown object distance within an object distance range". The specification fails to give explicit support for such feature.

Applicant is required to cancel the new matter in the reply to this Office Action.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 1-8, and 10-22 are rejected under 35 U.S.C. 112, first paragraph**, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The reasons for rejection based on the newly added matters are set forth in the paragraph above.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-8, and 10-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Hinnrichs (PN. 5,867,264) in view of the patent issued to Shipp et al (PN. 5,264,925).**

*Claims 1 and 15 have been amended significantly that necessitates the new ground of rejections.*

**Hinnrichs** teaches an *apparatus for imaging object* that is comprised of a diffractive lens (11, Figure 1) serves as the *imaging optics* for forming an image of *an object* (10, Figure 1) *at an object distance within object distance range*, wherein the diffractive lens has focal length that *varies* with the wavelength of the light that illuminates the object. The imaging apparatus further comprises a photodetector (12) serves as the *image-receiving unit* (5) for receiving the image of the object formed by the imaging diffractive lens. Hinnrichs teaches explicitly that a plurality of images of the object having different colors or wavelengths are formed by the diffractive lens at different focal points, wherein when the photodetector is located at *one particular focal length from the object* (such as  $f_r$ ), it will receive an in-focused red image of the object and a plurality of out-focused images of the object for all other colors of light. Hinnrichs then teaches that a *processor* is used to *enhance* the in-focus image which in a way “selects” the desired in-focus image among the plurality of images received, (please see Figures 1-2, column 1-3).

This reference has met all the limitations of the claims. Hinnrichs teaches that the image light from the object or the target includes image light of *different colors or wavelengths*, (i.e. several wavelengths such as red and blue, please see column 2 line 20), this implies that light including different colors or wavelengths is used to illuminate the object. However this reference does not teach *explicitly* that a light source is used to *sequentially* illuminate the object with light of different ones of a plurality of the wavelengths. With regard to claims 6-8 and 17, this reference does not teach *explicitly* that *separated* light sources such as light emitting diodes are used to generate the light of different wavelength. **Shipp et al** in the same field of endeavor teaches a color imaging system that uses a *plurality* of light emitting diodes (LEDs, 11-13, Figure 1, three diodes are used in this demonstration) for sequentially illuminating an object to obtain different color images of the object, (please see column 2, line 59 to column 3, line 9). It would then have been obvious to apply the teachings of **Shipp et al** to modify the imaging apparatus of **Hinnrichs** to use a light source that is capable of illuminating the object sequentially with different color or wavelength of the light so that different color or wavelength component of the image of the object can be processed at a time.

With regard to claims 2-3, Hinnrichs teaches that the focal length of the diffractive lens *inversely varies* with respect to the wavelength of the light, (red light has wavelength about 650 nm and blue light has wavelength about 500 nm and the focal length for the blue light is longer as shown in Figure 1). The diffractive lens (11) has a refractive structure as well as diffractive structure as shown in Figure 1.

With regard to claims 4-5 and 20, Hinnrichs teaches that the image receiving unit comprises an array of photo-detector (12). Although these references do not teach explicitly that the array of photosensors is CMOS detector array, but since the CMOS detector array is very common type of sensor array in the art to modify the apparatus to use one will have been obvious to one skilled in the art for the benefit of making the imaging apparatus including standard photo sensors with good signal detecting

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function and makes the manufacture process more standard and reduces cost as compared to using other non-standard and non-common detectors.

With regard to claims 10 and 16, Hinnrichs teaches that the best-focused image is processed to enhance the image, (please see column 3, lines 29-32).

With regard to claims 11-13 and 19, the references do not teach explicitly that the object distance is between 5 to 20 inches however such is either inherently included or an obvious modification to one skilled in the art for the benefit of making the imaging apparatus suitable for taking image of an object that is placed in the range claimed. **Hinnrichs** teaches that the light sources used include wavelengths of visible light (400 to 650 nm), (please see columns 1-3). With regard claims 12-13, although these references do not teach explicitly that the object is comprised of an iris of an eye or a fingerprint, such modifications would have been obvious to one skilled in the art for the benefit of making the imaging apparatus usable as authentication verification system for picking up images of eye or fingerprint. It also has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Madham*, 2 USPQ2d 1647 (1987).

With regard to claims 14 and 22, although this reference does not teach explicitly that the image pickup system comprises a digital still camera, however such feature is inherently included since the imaging lens and the photoelectric image receiver or the detector array essentially form the digital still camera.

With regard to claim 21, Shipp et al teaches that the sequential illumination of the different color of light is at a period of 1/60 second or a rate of 60 images per second, (please see column 2, lines 66-69). It would have been obvious to one skilled in the art to use the light source of Shipp et al to the imaging apparatus of Hinnrichs to obtain image in the standard frame rate.

***Response to Arguments***

6. Applicant's arguments with respect to amended claims 1-8 and 10-22 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

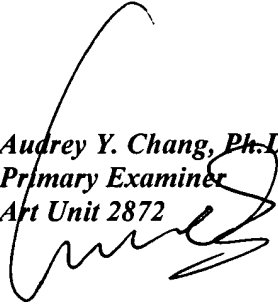
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Audrey Y. Chang, Ph.D.*  
*Primary Examiner*  
*Art Unit 2872*



A. Chang, Ph.D.